

Date=22/07/2020

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Subject ⇒ Recursion-2

IN PREVIOUS LECTURE (QUICK RECAP) Date-21/07/2020	In Today's Lecture (Overview)
<a href="#">⇒ Recursion In Python</a> <a href="#">⇒ What is recursion</a>  <a href="#">⇒ What is stack</a>  <a href="#">⇒ Join In Python</a>  <a href="#">⇒ What is Factorial</a>  <a href="#">⇒ Questions For self Practice////CC for the Day</a>	<p>This class was basically the revision of previous class and we learn very few things in this class</p> <a href="#">What is Palindrome</a>  <a href="#">Fibonacci Series/Problem</a>  <a href="#">Matrix Problem</a>  <a href="#">Important Things</a>

## What is Palindrome

### Definition

- A string is said to be **palindrome** if the reverse of the string is the same as string. For example, “radar” is a **palindrome**.because if you type radar in reverse you will get radar

-but “radix” is not a **palindrome**.

## In Short-

Palindrome Is a word that is a word, phrase, or sequence that reads the same backwards as forwards

## ==>How to Write Programme to check String is palindrome or not

```
# function which return reverse of a string
```

```
def isPalindrome(s):  
    return s == s[::-1]
```

```
s = "malayalam" #here you can write your name or string to check  
ans = isPalindrome(s)
```

```
if ans:  
    print("Yes")  
else:  
    print("No")
```

“[Click Here](#)” to Know more About It

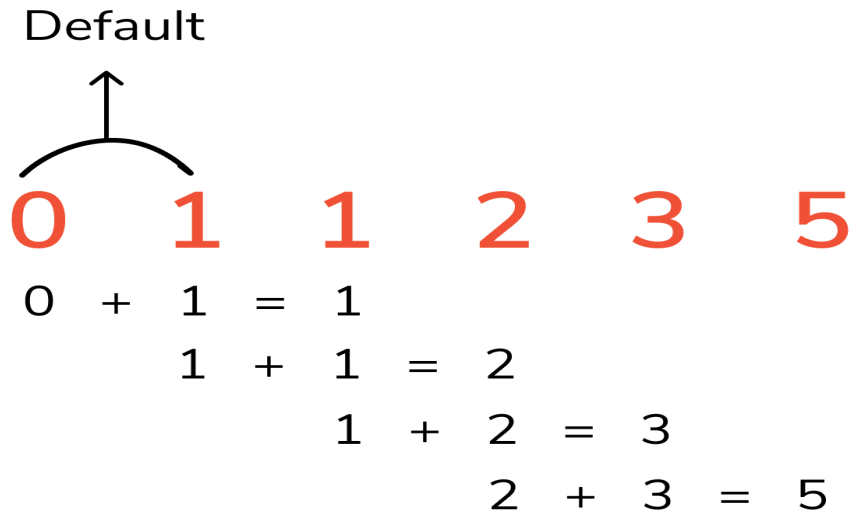
## Fibonacci Series/Problem

### -Definition

**Fibonacci series** is a **series** in which each number is the sum of the preceding two numbers.

=By default, the first two **numbers** of a **Fibonacci series** are 0 and 1.

# Fibonacci Series



How to Write programme to print fibonacci sequence?

```
def recur_fibo(n):  
    if n <= 1:  
        return n  
    else:  
        return(recur_fibo(n-1) + recur_fibo(n-2))  
  
nterms = int(input("enter number of sequence = "))  
  
if nterms <= 0:  
    print("Plese enter number higher than 0 ")  
else:  
    print("Fibonacci sequence:")  
    for i in range(nterms):  
        print(recur_fibo(i))
```

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## Matrix Problem

### Question is=

You Have to come to a Particular destination From Starting.  
You Have to tell **how many ways are there to reach From starting to destination**  
**given that you can only move right or down**

Rows are **n** and  
Columns are **m**

**Starting Coordinates are**  
0,0

**Ending Coordinates Are**  
(n-1,m-1)

			end +1
			end -1
start			

\*This Image is example

## How Do You Solve that?

```
# Python program to count all possible paths
# from top left to bottom right

# function to return count of possible paths
# to reach cell at row number m and column
# number n from the topmost leftmost
# cell (cell at 1, 1)
def numberOfPaths(m, n):
    # If either given row number is first
    # or given column number is first
    if(m == 1 or n == 1):
        return 1

    # If diagonal movements are allowed
    # then the last addition
    # is required.
    return numberOfPaths(m-1, n) + numberOfPaths(m, n-1)

# Driver program to test above function
m = 3
n = 3
print(numberOfPaths(m, n))
```

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This Video Will Solve 99% Doubts

<https://www.youtube.com/watch?v=QHWJONiTbmQ>

# Important Things

=Recursion Uses Time Complexity

=Always think for choices in Recursion

= Matrix problem very Important problem as it is asked in interviews